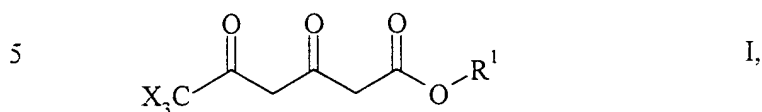


Claims:

1. A method for preparing compounds of the formula

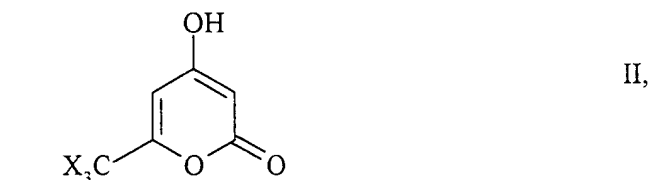


and the enols and *E* and *Z* isomers thereof

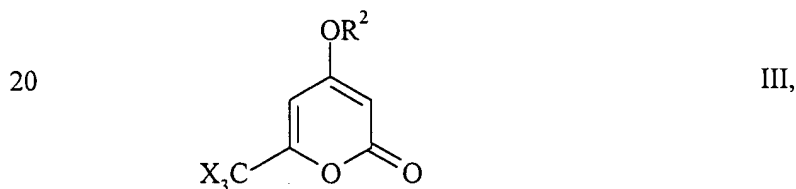
in which X is in each case independently of one another fluorine, chlorine or bromine,

and in which R¹ is alkyl, cycloalkyl, aryl or aralkyl, characterized in that a compound of

10



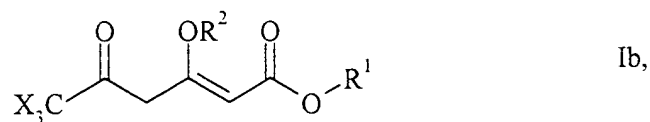
- 15 in which X has the stated meaning, is initially converted by reacting the hydroxyl group with a compound of the formula (R²O)₂SO₂ or with a compound of the formula Y-R² in which Y is tosyl, chlorine, bromine or iodine, and in which R² in each case has the abovementioned meaning, into a compound of the formula



in which R² is alkyl, cycloalkyl, allyl or benzyl, and X has the stated meaning, and the latter is then converted by reaction with a metal alcoholate of the formula R¹O⁻ $\frac{1}{n}$ Mⁿ⁺ in

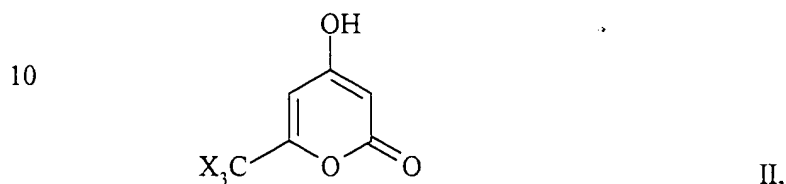
25 which R¹ is alkyl, cycloalkyl, aryl or aralkyl and Mⁿ⁺ is an alkali metal or alkaline earth metal cation and n = 1 or 2, and further treatment with a strong acid, into compounds of the formula I and/or enols thereof.

2. A method for preparing enol ethers of the formula

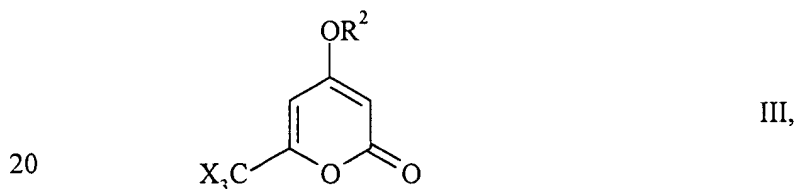


5 and the enols and *E* and *Z* isomers thereof

in which X is in each case independently of one another F, Cl or Br, and in which R^1 is alkyl, cycloalkyl, aryl or aralkyl, and R^2 is alkyl, cycloalkyl, allyl or benzyl, characterized in that a compound of the formula

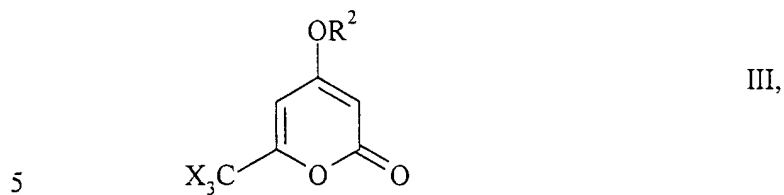


10 in which X has the stated meaning, is initially converted by reaction of the hydroxyl group with a compound of the formula $(\text{R}^2\text{O})_2\text{SO}_2$ or with a compound of the formula $\text{Y}-\text{R}^2$ in which Y is tosyl, chlorine, bromine or iodine, and in which R^2 in each case has
15 the abovementioned meaning, into a compound of the formula



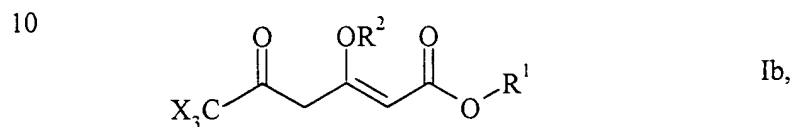
20 in which R^2 is alkyl, cycloalkyl, allyl or benzyl, and X has the stated meaning, and the latter is then converted by reaction with a metal alcoholate of the formula $\text{R}^1\text{O}^- \frac{1}{n} \text{M}^{n+}$ in which R^1 is alkyl, cycloalkyl, aryl or aralkyl and M^{n+} is an alkali metal or alkaline earth
25 metal cation and $n = 1$ or 2 , and optionally further treatment with a weak acid into enol ethers of the formula Ib and/or enols thereof.

3. Compounds of the formula



in which X is in each case independently of one another F, Cl or Br, and in which R² is alkyl, cycloalkyl, allyl or benzyl.

4. Compounds of the formula



and the enols and *E* and *Z* isomers thereof

15 in which X is in each case independently of one another fluorine, chlorine or bromine, and in which R¹ is alkyl, cycloalkyl, aryl or aralkyl, and in which R² is alkyl, cycloalkyl, allyl or benzyl.